ABSTRACT

A receiving apparatus and method for performing carrier detection in a frequency domain for a digital wavelet multi-carrier transmission. A wavelet transform of received data is performed to output complex data and then the complex data is delayed for one sampling period. Subsequently, the delayed complex data and delayed complex data are divided. A number of the divided complex data present within each of plural quadrants on orthogonal coordinates is calculated and a maximum number of data present within one of the quadrants is selected and compared with a threshold in order to decide whether the received data is intended data.